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Quality Engineering Test Report

SERIES: S-150 150W AC-DC SINGLE OUTPUT SWITCHING POWER SUPPLY

SAMPLE: A.S-150-5 5V / 30A D.S-150-12 12V / 12.5A G.S-150-24 24V / 6.5A
B.S-150-7.5 7.5V / 20A E.S-150-13.5 13.5V / 11.2A H.S-150-27 27V / 5.6A
C.S-150-9 9V / 16.7A F.S-150-15 15V / 10A D.S-150-48 48V / 3.2A

NO	TEST ITEM	TEST CONDITION / SPECIFICATION	RESULT	VERDICT
1	AC INPUT VOLTAGE RANGE	I/P:TESTING SPEC:176~264VAC O/P:FULL LOAD	E:128VAC~267VAC	P
2	LINE REGULATION	I/P:176~264VAC SPEC: O/P:FULL LOAD A: ±0.5% B: ±0.5% C: ±0.3% D: ±0.3% E: ±0.3% F: ±0.3% G: ±0.3% H: ±0.2% I : ±0.2% ±0.2%	A: 0% ~ 0.12% B: 0% ~ 0.08% C: -0.07% ~ 0% D: -0.05% ~ 0% E: -0.044% ~ 0.044% F: -0.04% ~ 0% G: -0.05% ~ 0% H: -0.044% ~ 0.044% I: -0.064% ~ 0.025%	P
3	LOAD REGULATION	I/P:230VAC SPEC: O/P:MIN. TO FULL LOAD A: ±0.5% B: ±0.5% C: ±0.3% D: ±0.3% E: ±0.3% F: ±0.3% G: ±0.3% H: ±0.2% I : ±0.2% ±0.2%	A: -0.12% ~ +0.12% B: -0.16% ~ +0.08% C: -0.07% ~ +0.07% D: -0.05% ~ +0.05% E: -0.044% ~ 0.044% F: -0.04% ~ +0.04% G: -0.02% ~ 0% H: -0.022% ~ 0% I: -0.013% ~ 0.013%	P
4	OUTPUT VOLTAGE TOLERANCE	I/P:176~264VAC SPEC: O/P:0% TO FULL LOAD A: ±2% B: ±1% C: ±1% D: ±1% E: ±1% F: ±1% G: ±1% H: ±1% I : ±1% ±1%	A: -0.12% ~ +0.26% B: -0.25% ~ 0% C: -0.14% ~ +0.07% D: -0.1% ~ +0.05% E: -0.044% ~ 0.044% F: -0.09% ~ +0.04% G: -0.10% ~ +0.03% H: -0.07% ~ 0.022% I: -0.079% ~ 0.0125%	P
5	RIPPLE & NOISE	I/P:230VAC SPEC: O/P:FULL LOAD A: 150mV B: 150mV C: 180mV D: 180mV E: 180mV F: 180mV G: 240mV H: 240mV I : 240mV	A: 92mV B: 120mV C: 127mV D: 114mV E: 83mV F: 95mV G: 127mV H: 110mV I: 136mV	P
6	AC INPUT CURRENT	I/P:230VAC SPEC:1.6A O/P:FULL LOAD	E:1.515A	P
7	MAX. INRUSH CURREN	I/P:230VAC SPEC:35A O/P: FULL LOAD	E:34A	P
8	O/P VOLTAGE ADJ.RANGE	I/P:230VAC SPEC: A: 4.5~5.5V O/P:MIN. LOAD B: 6~8.3V C: 8~10.4V D: 10.6~13.2V E: 12~15V F: 13.5~16.5V G: 21~28V H: 24~30V I : 43~53V	A: 4.43V~5.88V B: 5.64V~8.82V C: 7.78V~11.4V D: 9.56V~14.04V E: 10.69V~15.65V F: 12.17V~17.70V G: 19.17V~28.86V H: 22.98V~31.84V I : 40.51V~54.76V	P
9	SET UP TIME	I/P:230VAC SPEC:100mS O/P:FULL LOAD	E: 34mS	P
10	HOLD UP TIME	I/P:230VAC SPEC:20mS O/P:FULL LOAD	E: 31.3mS	P

<table>
<tr><th>NO</th><th>TEST ITEM</th><th>TEST CONDITION / SPECIFICATION</th><th>RESULT</th><th>VERDICT</th></tr>
<tr><td>11</td><td>EFFICIENCY</td><td>I/P:230VAC
O/P:FULL LOAD
SPEC: A:78%
B:80%
C:80%
D:82%
E:83%
F:84%
G:85%
H:86%
I :87 %</td><td>A:79.58%
B:82.71%
C:83.17%
D:83%
E:82.97%
F:84.35%
G:85.76%
H:85.997%
I :86.222%</td><td>P</td></tr>
<tr><td>12</td><td>OVER LOAD PROTECTION</td><td>I/P:230VAC
O/P:TESTING
SPEC: 105%~150%</td><td>A:129%
B:125%
C:120%
D:129%
E:125%
F:125%
G:130%
H:130%
I :142%</td><td>P</td></tr>
<tr><td>13</td><td>OVER VOLTAGE PROTECTION</td><td>I/P:230VAC
O/P:TESTING
S-150-24
SPEC: 115%~135%
125%~145%</td><td>A:121%
B:134%
C:133%
D:127%
E:125%
F:124%
G:134%
H:129%
I :119%</td><td>P</td></tr>
<tr><td>14</td><td>GROUND LEAKAGE CURRENT</td><td>I/P:240VAC
SPEC: L-FG--<3.5mA
N-FG--<3.5mA</td><td>E: L-FG:0.75mA
N-FG:0.75mA</td><td>P</td></tr>
<tr><td>15</td><td>INSULATION RESISTANCE</td><td>SPEC: I/P-O/P: 500VDC/100MOhms MIN.
I/P-FG: 500VDC/100MOhms MIN.
O/P-FG: 500VDC/100MOhms MIN.</td><td>E: O/P-FG >100MOhms
I/P-O/P >100MOhms
I/P-FG >100MOhms</td><td>P</td></tr>
<tr><td>16</td><td>DIELECTRIC / WITHSTAND VOLTAGE</td><td>SPEC: I/P- O/P: 3KVDC/ 1 min. (10mA CUT-OFF)
I/P - FG: 1.5KVDC/ 1 min. (10mA CUT-OFF)
O/P -FG: 0.5KVDC/ 1 min. (10mA CUT-OFF)</td><td>E: I/P-O/P :5.16mA
I/P-FG :4.8mA
O/P-FG :3.361mA</td><td>P</td></tr>
<tr><td rowspan="2">17</td><td rowspan="2">EMS TEST</td><td>EFT TEST:
EN50082-1 IEC1000-4-4</td><td>F:CRITERIA A OK</td><td>P</td></tr>
<tr><td>SURGE TEST:
EN50082-1 IEC1000-4-5</td><td>F:CRITERIA A OK</td><td>P</td></tr>
<tr><td>18</td><td>BURN-IN TEST</td><td>I/P: 230VAC O/P: FULL LOAD
TA:26.2°C BURN-IN DURATION : 2 hrs</td><td>A:NON BREAK</td><td>P</td></tr>
<tr><td>19</td><td>ENVIRONMENT TEST</td><td>HIGH AMBIENT TEMPERATURE FULL LOAD TEST
I/P:230VAC O/P:FULL LOAD
AMBIENT TEMPERATURE:53.7°C</td><td>A: AFTER 22.5 hrs
NON BREAK</td><td>P</td></tr>
<tr><td>20</td><td>TEMPERATURE RISE TEST Trise OF PARTS</td><td>A: I/P :230VAC AFTER 2 hr BURN-IN WITH COOLING FAN (23CFM)
O/P :FULL LOAD TA:26.2°C
<table>
<tr><th>POSITION</th><th>P/N</th><th>TEMP</th><th>Trise</th></tr>
<tr><td>BD1</td><td>BRIDGE DIODE</td><td>63.4°C</td><td>37.2°C</td></tr>
<tr><td>Q2</td><td>MAIN TRANSISTOR</td><td>50.8°C</td><td>24.6°C</td></tr>
<tr><td>T1</td><td>MAIN TRANSFORMER WIRE</td><td>66.8°C</td><td>40.6°C</td></tr>
<tr><td>D13</td><td>O/P DIODE</td><td>76°C</td><td>49.8°C</td></tr>
<tr><td>C34</td><td>O/P FILTER CAPACITOR</td><td>33.5°C</td><td>7.3°C</td></tr>
<tr><td>L1</td><td>O/P CHOCK</td><td>54.3°C</td><td>28.1°C</td></tr>
<tr><td>C6</td><td>I/P FILTER CAPACITOR</td><td>53.6°C</td><td>27.4°C</td></tr>
<tr><td>LF1</td><td>I/P FILTER TRANSFORMER</td><td>42.1°C</td><td>15.9°C</td></tr>
</table></td><td>P</td></tr>
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NEXT PREVIOUS

NO	TEST ITEM	TEST CONDITION / SPECIFICATION	RESULT	VERDICT
21	LIFE CYCLE	A: SUPPOSE C34 IS THE MOST CRITICAL COMPONENT I/P:230VAC O/P:FULL LOAD Ta:25°C Tc34:32.3°C Life: 898844hrs I/P:230VAC O/P:FULL LOAD Ta:50°CTc34:56.6°C Life: 166794hrs		P
22	CRITICAL COMPONENT RECORD (FOR QC INSPECTION REFERENCE ONLY)	A: FUSE :4A/250V BRIDGE DIODE :KBJ608G LINE FILTER :TF096-R1 EE-25 TRANSFOMER TF133A-R2 ETD-34 POWER SWITCHER :2SC2625 TO-3P OUTPUT DIODE :CTB34M TO-3P OUTPUT CAPACITOR :ELNA 3300uF/10V 105°C RJH INPUT CAPACITOR :NITSUKO 330uF/200V 85°C P.C.B :S-150N-R5 CEM-3 2 OZ SS		

DATE	SAMPLE	TEST RESULT	TEST	APPROVAL
19980515	S-150	PASS	H.C.LIOU	MAX LIN
19990510	S-150-24	PASS	H.C.LIOU	MAX LIN
20010226	S-150-13.5,27,48	PASS	SAM	MAX LIN

PREVIOUS